

REMARKS

Claims 1, 6-11, 13, 14, 15 and 16 are pending in the application. Claim 8 has been amended. Support for the amendment and added claim may be found in the Specification as originally filed and no new matter has been added. Applicants acknowledge the Examiner's finding of allowable subject matter in Claim 12.

REJECTIONS UNDER 35 USC 102(e)

Claims 1, 6, 7, 8-11, 13 and 14 stand rejected under 35 USC 102(e) as being anticipated by Trull et al. (hereinafter "Trull").

Applicants' inventions of injector systems include in amended Claim 1 a piston that "comprises an elastomeric member adapted to expand in a radial direction to connectively engage the plunger to retract the plunger within the syringe," in amended Claim 8 a piston that "comprises a collet member comprising one or more segment members adapted to outwardly deflect inside the plunger in a radial direction to engage the plunger when the piston is retracted," in Claim 11 "one or more plunger gripper members associated with the piston and adapted to be biased by the sleeve member into engagement with the plunger upon retraction of the piston."

In Fig. 13 Trull discloses resilient members that are configured to operate in different directions. In particular, Trull discloses that:

The driving head 240 is drivable in either of the forward or rearward directions, as indicated by bidirectional arrow A. The translation of the driving head by the reciprocateable drive shaft 254 causes the engagement elements 232 and 234 to be deflected in the directions of movement indicated by bidirectional arrows B and C, with the resilient elements being translated radially outwardly by forward movement of the driving head, and radially inwardly by retracting movement of the driving head, as a result of the tapered configuration of the wall surface 244 and the driving head 242 surface.

In operation, the angiographic syringe is positioned as shown, and forward movement of the drive shaft 254 and corresponding advancement of the driving head 240 causes the resilient elements 233 and 234 to move radially outwardly

to engage with the matable surfaces 228 and 230, so that the driving head projections bear compressively outwardly against the projection elements of the plunger, to engage the driving head and plunger.

Conversely, when the plunger is retracted by the driving head, and the driving head enters the cavity bounded by conical wall surface 244, the retraction will cause the retention elements 232 and 234 to radially inwardly translate and to disengage from the engagement surfaces of the projections on the plunger. (Col. 10, lines 40-65).

Thus, Trull discloses a driving head that is designed completely differently than Applicants' invention. In fact, Trull is completely opposite of Applicants' invention because in Trull retraction of the driving head causes retention elements to radially inwardly translate and to disengage from the engagement surfaces of the plunger, but during the forward movement of the driving head causes retention elements to outwardly translate and to engage. Accordingly, Trull does not disclose Applicants' inventions of Claims 1, 8 and 11.

Additionally regarding Claim 1, Claim 1 is directed to an injection system including a piston that "comprises an elastomeric member adapted to expand in a radial direction to connectively engage the plunger to retract the plunger within the syringe." The elastomeric member is a cylindrical element with external walls and internal walls. In one non-limiting example of Applicants' invention:

[t]he diameter of elastomeric member 1202 is slightly smaller than the diameter of the hole 1214 in plunger 1238. Also, the diameter of actuator 1210 is smaller than the diameter of hole 1214.

The operation of the second releasable mechanism 40 illustrated in Figure 35 will now be described. Because the diameter of hole 1214 in plunger 1238 is larger than the diameter of elastomeric member 1202 and of actuator 1210, when piston 1242 is pushed forward, elastomeric member 1202 and actuator 1210 easily fit into hole 1214. Plunger 1238 can then be advanced by piston 1242 without a connective engagement existing therebetween. However, once positioned in this manner, to connectively engage the plunger 1238 (e.g., to retract plunger) actuator 1210 is pulled toward elastomeric member 1202 by rod 1208, as shown by arrow 1216 in Figure 35. The pressure from actuator 1210 compresses elastomeric member 1202 so that external sides 1204 swell or expand from their unstressed condition. The approximate shape of the swelled walls 1218 of elastomeric member 1202 is shown in dotted line format in Figure

35. Swelled walls 1218 engage walls 1220 of hole 1214 so that piston 1242 releasably engages plunger 1238. Plunger 1238 can now be retracted to, for example, aspirate fluid into the syringe. (*Emphasis Added*, Specification, page 29, para 4)

As discussed above, Trull discloses a structure entirely different that Applicants' invention. Namely Trull discloses, "[t]he translation of the driving head by the reciprocateable drive shaft 254 causes the engagement elements 232 and 234 to be deflected in the directions of movement indicated by bidirectional arrows B and C, with the resilient elements being translated radially outwardly by forward movement of the driving head, and radially inwardly by retracting movement of the driving head" and "[c]onversely, when the plunger is retracted by the driving head, and the driving head enters the cavity bounded by conical wall surface 244, the retraction will cause the retention elements 232 and 234 to radially inwardly translate and to disengage from the engagement surfaces of the projections on the plunger." Therefore, Trull does not disclose the novel structure of Applicants' invention of Claim 1 including a piston with an elastomeric member.

Additionally regarding Claim 8, Claim 8 includes "a collet member comprising one or more segment members adapted to outwardly deflect inside the plunger in a radial direction to engage the plunger when the piston is retracted." Trull disclose an entirely different structure with no segmented members that outwardly deflect inside the plunger when the plunger is retracted. Therefore, Trull does disclose Applicants' invention of independent Claim 8 or Claim 15 which depends from Claim 8.

Additionally regarding Claim 11, Claim 11 includes "one or more plunger gripper members associated with the piston and adapted to be biased by the sleeve member into engagement with the plunger upon retraction of the piston" Trull does not disclose any of the plunger grippers and sleeve member of Applicants' invention of Claim 11.

In addition, the Office Action alleges that Applicants' argument filed Feb 21, 2007 was not found to be persuasive because the cited portion of the Trull patent (Col. 10) relates to when the piston is fully withdrawn into the face plate 250 and the plunger is disengaged from the piston in order to replace the front loading syringe. Trull is not

describing the injection phase of the operation in the cited section.

The Applicant however, is referring to Col. 10 in the Response because the rejection in the Office Action alleges that Fig. 13 (which is described in section 10) discloses Applicants' invention. Therefore, if the Office Action is saying that the disclosure in Trull does not relate to Applicants' invention because the structure is different and related to "replac[ing] the front loading syringe," then because Trull's invention is related to something entirely different eg. supporting "replace[ment] of the front load syringe," then Trull does not disclose Applicants' invention and reconsideration is respectfully requested.

Regarding Claims 6-7, 9-10 and 12-14, Claims 6-7, 9-10 and 12-14 are not disclosed by Trull, and Claims 6-7, 9-10 and 12-14 depend from Claims 1, 8 and 11, which as discussed are also believed to be allowable, thus Claims 2-7, 9-10 and 12 are also believed to be in condition for allowance. Reconsideration of Claims 1, 6-7, 9-14 is requested.

NEW CLAIMS

New Claim 16 includes that "the elastomeric member compresses in an axial direction thereby permitting the expansion." Support can be found in the specification as originally filed at page 29, para 4, lines 7-9. Trull does not disclose application invention of Claim 16

In view of the above amendments and remarks, Applicants submit that the claims are in condition for allowance and the Examiner would be justified in allowing them.

Respectfully submitted,

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July 9, 2007

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